

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-10 (canceled).

11. (New) A gas sensor device, comprising:

- a sensor chamber that receives via a diffusion barrier a gas to be analyzed;

- at least one pump cell situated between the sensor chamber and the gas to be analyzed, wherein the at least one pump cell is exposed to the gas to be analyzed and includes an outer pump electrode;

- a measuring electrode situated in a reference-gas space;

- a measuring cell situated between the sensor chamber and the reference-gas space, wherein the outer pump electrode of the pump cell exposed to the gas to be analyzed receives a pump current which depends on a measuring voltage that is applied to the measuring electrode situated in the reference-gas space; and

- a constant current source for supplying the pump current, wherein the constant current source is at least one of: a) configured to be set to at least two values of the pump current; and b) configured for alternating operation with ON phases and OFF phases, the duration of the ON phases and OFF phases being specified.

12. (New) The device as recited in Claim 11, wherein the constant current source specifies a positive polarity value and a negative polarity value for the pump current.

13. (New) The device as recited in Claim 12, wherein an average of the pump current over a predefined measuring time is provided.

14. (New) The device as recited in Claim 13, wherein for a fixed value of the pump current and a predefined duration of the ON phases and the OFF phases, the number of ON phases and OFF phases is predefined.

15. (New) The device as recited in Claim 12, wherein the measuring voltage is recorded during the OFF phases.

16. (New) The device as recited in Claim 12, wherein the constant current source is controlled as a function of a differential signal of a comparator resulting from the difference between the measuring voltage and a setpoint voltage.

17. (New) The device as recited in Claim 12, wherein a plurality of pump cells is provided, and the outer electrode of each pump cell receives the pump current.

18. (New) The device as recited in Claim 16, wherein air is present in the reference-gas space.

19. (New) The device as recited in Claim 18, wherein the setpoint voltage is set to a value between 300 mV to 700 mV.

20. (New) The device as recited in Claim 11, wherein the gas sensor device is an exhaust-gas sensor, and wherein the outer pump electrode and the diffusion barrier are exposed to the exhaust gas.

21. (New) A device for operating a gas sensor, the gas sensor including a sensor chamber that receives via a diffusion barrier a gas to be analyzed; at least one pump cell situated between the sensor chamber and the gas to be analyzed, wherein the at least one pump cell is exposed to the gas to be analyzed and includes an outer pump electrode; a measuring electrode situated in a reference-gas space; and a measuring cell situated between the sensor chamber and the reference-gas space, wherein the outer pump electrode of the pump cell exposed to the gas to be analyzed receives a pump current which depends on a measuring voltage that is applied to the measuring electrode situated in the reference-gas space, the device comprising:

a constant current source for supplying the pump current, wherein the constant current source is at least one of: a) configured to be set to at least two values of the pump current; and b) configured for alternating operation with ON phases and OFF phases, the duration of the ON phases and OFF phases being specified.

22. (New) The device as recited in Claim 21, wherein the constant current source specifies a positive polarity value and a negative polarity value for the pump current.

23. (New) The device as recited in Claim 22, wherein an average of the pump current over a predefined measuring time is provided.

24. (New) The device as recited in Claim 23, wherein for a fixed value of the pump current and a predefined duration of the ON phases and the OFF phases, the number of ON phases and OFF phases is predefined.

25. (New) The device as recited in Claim 22, wherein the measuring voltage is recorded during the OFF phases.

26. (New) The device as recited in Claim 22, wherein the constant current source is controlled as a function of a differential signal of a comparator resulting from the difference between the measuring voltage and a setpoint voltage.

27. (New) The device as recited in Claim 22, wherein a plurality of pump cells is provided, and the outer electrode of each pump cell receives the pump current.

28. (New) The device as recited in Claim 26, wherein the setpoint voltage is set to a value between 300 mV to 700 mV.